

Marijuana Legalization? The Rest of the Story

Iowa Governor's Office of Drug Control Policy

www.lowa.Gov/ODCP
February 2014

U.S. Marijuana Laws

- Marijuana remains illegal under U.S. law (1972) & in 30 states, including Iowa, as a Schedule I Controlled Substance (high potential for abuse & no accepted medical value).
- *20 states & DC allow "medical marijuana" on a statewide basis (1996-2014), about half by ballot votes. (*Alaska, Arizona, California, Colorado, Connecticut, Delaware, Hawaii, Illinois, Maine, Massachusetts, Michigan, Montana, Nevada, New Hampshire, New Jersey, New Mexico, Oregon, Rhode Island, Vermont, Washington & District of Columbia. New York's Governor has announced plans for a limited hospital-based program.)
- Voters in 2 states (Colorado & Washington State in 2012/2014) legalized general adult marijuana use.

Other Legal Developments

- Possible buyer's remorse? Over 100 communities in Colorado & 200 in California have enacted local bans on "medical marijuana" centers. The city council tried to ban "medical marijuana" dispensaries in Los Angeles. Similar efforts to ban marijuana businesses are under consideration in parts of Washington State.
- Federal law enforcement has cracked down in California, closing up to 600 "medical marijuana" dispensaries for violating federal controlled substance laws or state laws re: nonprofits, caregivers, medical use, etc. Similar raids have been conducted in Colorado.
- Lawsuits & court challenges are pending.

Scientific Positions on Marijuana

- The FDA has not approved the use of marijuana as medicine, saying "there is currently sound evidence that smoked marijuana is harmful."
- The Institute of Medicine has declared smoking marijuana is unsafe, & "marijuana is not modern medicine."
- The National Institute on Drug Abuse reports "marijuana is addictive," with nearly 4.5 million Americans meeting the clinical criteria for marijuana abuse or dependence.

Health Group Positions on Marijuana

 Major public health organizations (American Cancer Society, American Glaucoma Foundation, American Medical Association, American Psychiatric Association, National Pain Foundation, National Multiple Sclerosis Society, National Association of School Nurses, et al.) do not support smoked marijuana.

Health Group Positions on Marijuana

- The AMA "believes (1) cannabis is a dangerous drug & as such it is a public health concern; (2) sale & possession of marijuana should not be legalized; (3) handling of offenders should be individualized; & (4) additional research should be encouraged." 2013 American Medical Association
- "There is no current scientific evidence that marijuana is in any way beneficial for the treatment of any psychiatric disorder. In contrast, current evidence supports, at a minimum, a strong association of cannabis use with the onset of psychiatric disorders. Adolescents are particularly vulnerable to harm, given the effects of cannabis on neurological development."

2013 American Psychiatric Association

Health Group Positions on Marijuana

- "Until further research in this area, ASAM cannot endorse the legalization of the use of marijuana either as a 'medicine' or for any other sanctioned use of this drug. Smoking any drug is an unhealthy form of drug delivery." 2011 American Society of Addiction Medicine
- "Drug Courts have seriously addicted individuals with long criminal records who have alienated nearly everyone they love. In every case, they tell us it began with marijuana...NADCP unequivocally stands against the legalization of marijuana and the use of smoked marijuana as 'medicine'." 2012 National Association of Drug Court Professionals

Claims of Pro-Legalization Supporters



- Medicalization: Marijuana can be used to help treat people for a wide range of chronic health conditions.
- Decriminalization: Current laws overcrowd prisons & unfairly make criminals out of marijuana users.
- Legalization: Controlling marijuana as illegal is too costly for taxpayers, & legalizing it would create an infusion of tax revenue.

- Marijuana can cause or worsen respiratory symptoms. It impairs short-term memory & motor coordination; slows reaction time; alters mood, judgment & decision-making; & in some people can cause severe anxiety or psychosis. Marijuana raises heart rate. 2012 National Institute on Drug Abuse, NIH, Drug Facts
- Marijuana use causes distorted perceptions, impaired coordination, difficulty with thinking & problem solving & disrupted learning & memory.

2012 National Institute on Drug Abuse, NIH, Drug Facts

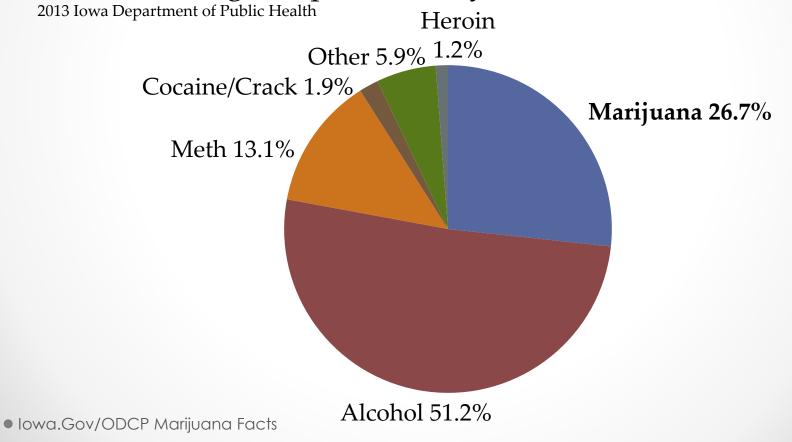
 Marijuana use is associated with a higher likelihood of dropping out from school...marijuana also contributes to accidents while driving. 2012 National Institute on Drug Abuse, NIH, Drug Facts

- More U.S. citizens met the American Psychiatric Association's diagnostic criteria for marijuana abuse or dependence than for pain relievers, cocaine, tranquilizers, hallucinogens & heroin combined.
 - 2011 U.S. Substance Abuse & Mental Health Services Administration, National Survey on Drug Use & Health
- Marijuana is addictive....about 9% of users become addicted to marijuana. 2012 National Institute on Drug Abuse, NIH, Drug Facts

- Marijuana dependent users are 15 times more likely to have a mental health disorder than those in the general population. March 2013 Addiction, Trimbos Netherlands Institute of Mental Health & Addiction
- 26.7% of Iowans entered substance abuse treatment due primarily to marijuana use, the highest level in 20 years, including more than 2,900 Iowa juveniles.

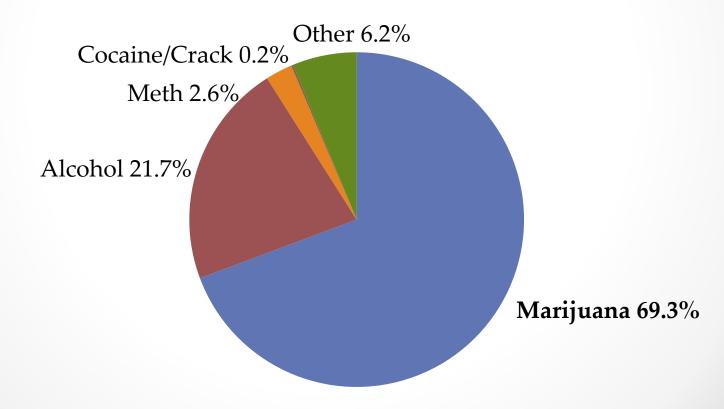
2013 Iowa Department of Public Health

• The proportion of Iowans (adults & juveniles) entering substance treatment primarily due to marijuana use has reached its highest point in 20 years – 26.7%.



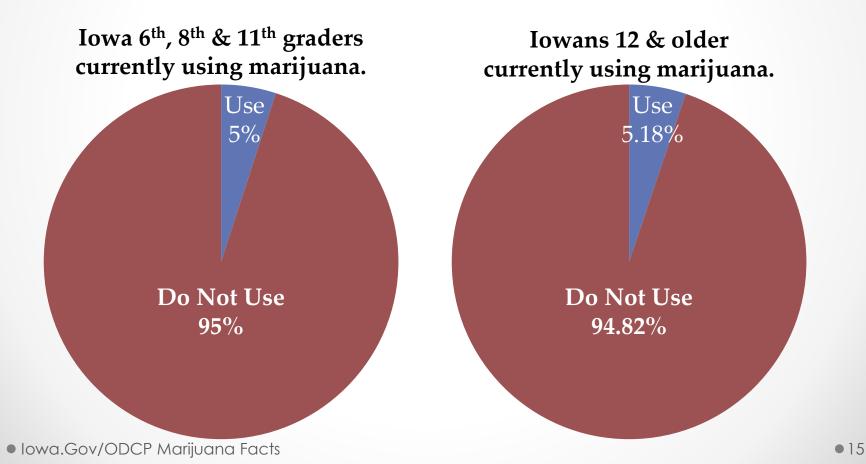
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• The proportion of Iowa juveniles entering substance treatment primarily due to marijuana use has reached its highest point in 20 years – 69.3%. 2013 Iowa Department of Public Health

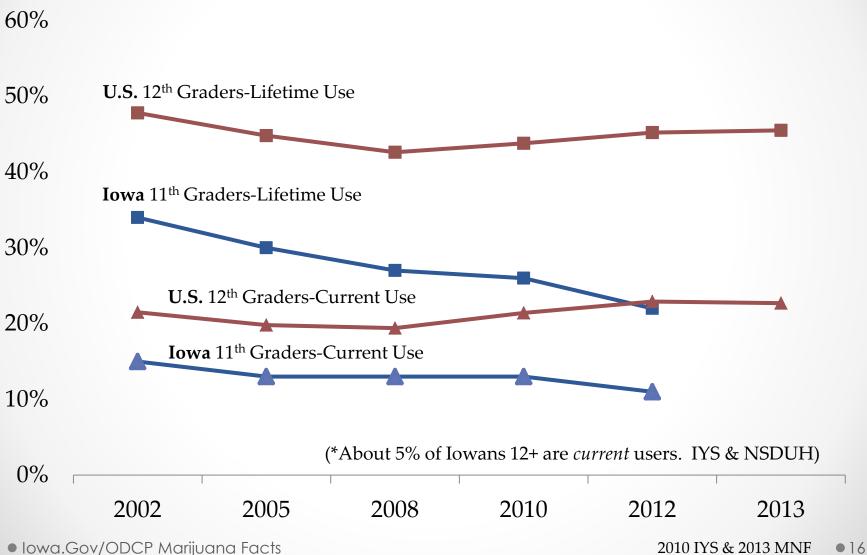


- Marijuana is Iowa's most used illicit drug. However, while more have tried it, the vast majority of Iowans choose not to use it now:
- 5% of Iowa 6th, 8th & 11th graders currently use marijuana.
- 5.18% of all Iowans 12 & older currently use marijuana. 2010-2011 National Survey on Drug Use & Health

• Most Iowans are not current users (past 30 days) of marijuana. 2012 Iowa Youth Survey & 2010-2011 National Survey on Drug Use & Health



Marijuana & Health: Iowa vs. U.S.



• Marijuana is the 2nd leading substance for which Americans receive drug treatment & a major cause for visits to emergency rooms.

2010 U.S. Substance Abuse & Mental Health Services Administration, Treatment Episode Data Set

- Marijuana was involved in 36% of all U.S. emergency department visits involving illegal drugs. The rate of emergency department visits involving marijuana increased 19% from 2009-2011, & is up 52% since 2004. 2011 Substance Abuse & Mental Health Services Administration, Drug Abuse Warning Network
- Marijuana was involved in 932 Iowa emergency department visits, more than double the 455 such visits reported 6 years earlier. 2012 Iowa Department of Public Health

 Marijuana, the most widely used illicit drug, may double stroke risk in young adults.

2013 University of Auckland in New Zealand, American Stroke Association's International Stroke Conference

 Marijuana is a causal component, among others, in the development of schizophrenia & other psychotic disorders. Using marijuana increases the risk of young people developing a psychotic illness, such as schizophrenia. 2004 British Journal of Psychiatry & 2007 Lancet

- Children whose moms used marijuana during pregnancy have a higher rate of executive functioning difficulties, which interfere with behavior. 2011 Psychology Today, Ira J. Chasnoff, M.D.
- Pregnant women who smoke marijuana may increase their risk of stillbirth 2.8 fold. Researchers found marijuana was the most common drug found in umbilical cord blood from stillborn infants.

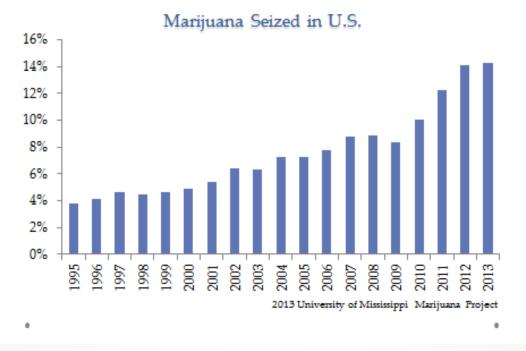
 2013 Obstetrics & Gynecology Journal, Michael Varner, M.D.
- Using marijuana during pregnancy can affect a baby's brain development by interfering with how brain cells are wired. The effects could last into adulthood.

2014 European Molecular Biology Organization

- Researchers found dopamine levels in the striatum part of the brain were lower in people who smoke more cannabis & those who began using the drug at a younger age.
 They suggest this could explain why some cannabis users may lack motivation to work or pursue normal interests.
 2013 Imperial College London, UCL & King's College London, Biological Psychiatry Journal
- Teen marijuana smokers may damage brain areas critical to memory & reasoning.
 2013 Northwestern University Feinberg School of Medicine
- Marijuana sold in dispensaries as medicine has the same quality & health risks as marijuana sold on the street.
 July 2012 National Institute on Drug Abuse, NIH, Drug Facts

• Average marijuana THC potency is over 14%, up from less than 4% in 1995, a nearly 4-fold increase. THC potency was less than 1% in 1972. 2013 University of Mississippi Marijuana Project

Increased THC Potency



- Cannabis can be detected in daily smokers' blood for a month after last intake. In 2009, 12.8% of young adults reported driving under the influence of illicit drugs & in the 2007 National Roadside Survey more drivers tested positive for drugs than alcohol. Cannabis smokers had a 10-fold increase in car crash injury vs. infrequent or nonusers after adjusting for blood alcohol concentration. ²⁰¹³ American Association for Clinical Chemistry
- Marijuana was detected in 57% of all Iowa drug impaired driving cases evaluated by drug recognition experts.

 2013 Iowa Governor's Traffic Safety Bureau
- Iowa drug-related traffic fatalities for the last two years (57) nearly equal the total for the 4 previous years (60).

 2012 Iowa Department of Transportation & Public Safety

- Despite having the highest per capita rate of "medical marijuana" use in the U.S., a study of Colorado doctors finds most family physicians in that state are not convinced of marijuana's health benefits & believe its use carries risks. 19% of Colorado doctors said physicians should recommend "medical marijuana," while 46% said they should not do so. February 2013 Journal of the American Board of Family Medicine
- Doctors should not prescribe "medical marijuana" to teens with chronic pain. Consequences may be very, very severe, particularly for adolescents who may get rid of their pain—or not—at the expense of the rest of their life.

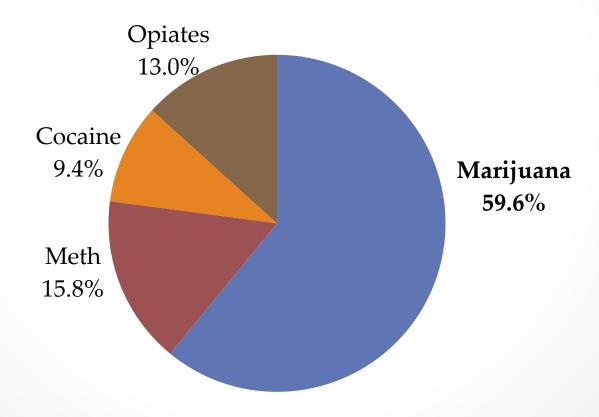
 June 2013 Mayo Clinic Proceedings

Workplace Safety & Productivity

- Heavy marijuana use can impair physical & mental health, cognitive abilities, social life & career status.
 2010 National Institute on Drug Abuse, NIH, Info Facts
- Worker marijuana use is associated with more absences, tardiness, accidents, workers' comp claims & turnover.
 Those testing positive for marijuana had 55% more accidents, 85% more injuries & 75% more absenteeism.
 2010-2011 National Institute on Drug Abuse, NIH, Research Report Series
- 17.2% of unemployed workers in the U.S. have a substance use disorder. 2011 National Survey on Drug Use & Health

Workplace Safety & Productivity

• 59.6% of + Iowa workplace drug tests were for marijuana.
2002-2008 Iowa Department of Public Health



- Teen past-month heavy marijuana users in the U.S. are more likely than teens who have not used marijuana in the past year to: use cocaine/crack (30x); use Ecstasy (20x); abuse prescription pain relievers (15x); & abuse over-the-counter medicines (14x). 2012 Partnership Attitude Tracking Study
- Anti-marijuana attitudes among U.S. teens have eroded, with about half (51% vs. 61% in 2005) saying they see "great risk" in using marijuana. 2012 Partnership Attitude Tracking Study
- Increased availability & acceptability would likely lead to increased consumption of marijuana. 2010 Rand Corporation

- Marijuana use among teens has drifted higher in recent years, after a decade or more of fairly steady decline. Past month use of marijuana by 12th graders increased from the most recent low of 18.3% in 2006 to 22.7% in 2013, even as high school seniors' use of alcohol & cigarettes declined. 2013 Monitoring the Future Survey/University of Michigan
- "...the proportion of adolescents seeing marijuana use as risky declined again sharply...Perceived risk has been a lead indicator of use, both for marijuana & other drugs... This could foretell further increases in use in the future."

 2013 Monitoring the Future Survey/Lloyd Johnston, Principal Investigator

• The risk of concussion is 3 to 5 times higher for teenagers who use marijuana or alcohol. Those who reported using marijuana 10 or more times over the past year had more than 3 times the risk, compared with students who did not use alcohol or marijuana.

2013 Journal of the American Medical Association, St. Michael's Hospital-Toronto

- Marijuana use negatively effects motivation, memory & learning. 2011 National Institute on Drug Abuse, NIH, Facts Parents Need to Know
- Substance use, especially marijuana use, contributed to college students skipping more classes, spending less time studying, earning lower grades, dropping out of college and being unemployed after college.

March 2013 Journal of Studies on Alcohol & Drugs, University of Maryland School of Public Health Study

- Persistent marijuana use during adolescence can cause a long-term 8-point drop in IQ, & harm attention span & memory. 2012 National Academy of Sciences, Dunedin Study
- "IQ is a strong determinate of a person's access to college education, getting a job, performance on the job & tendency to develop heart disease. So those individuals who lose IQ points may be disadvantaged toward the most important aspects of life."

Dunedin Study lead author & Duke University researcher, Madeline Meier

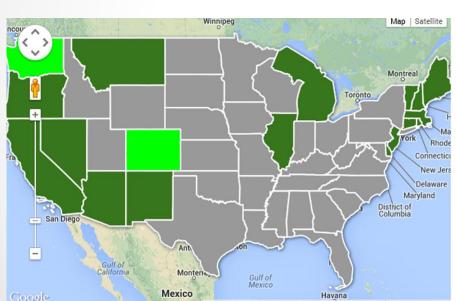
• Virtually every brain function was impaired: memory, processing speed, executive functions, verbal skills, attention, etc. Quitting or cutting back did not fully eliminate IQ loss. Dunedin Study lead author & Duke University researcher, Madeline Meier

- Under US law, federal student aid may be suspended, in the event of a drug conviction for an offense that occurs while receiving the aid. College students can regain federal aid eligibility by successfully completing an approved substance abuse treatment program or passing two drug tests by an approved program. US Department of Education
- In Iowa, during the 2012-2013 school year, 10 of 182,383 college students (0.0055%) qualified for suspension of federal student aid due to a drug conviction.

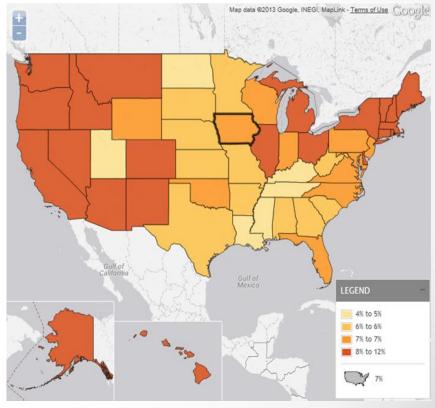
2012 Iowa College Student Aid Commission

States with "Medical Marijuana" (2013 Governing Magazine)

Marijuana Use by Age Group: 12-17 (2013 Kids Counts/NSDUH, 2009-2010)



Plus Alaska & Hawaii, not shown.



- Few California "medical marijuana" users have cancer, HIV/AIDS, glaucoma or MS. The average user is 32 years of age, & 87.9% tried marijuana before age 19. 2011 Journal of Drug Policy Analysis. 2007 O'Connell, T., Harm Reduction Journal
- Oregon's "medical marijuana" users cite severe pain 65% of the time vs. 5% reports of cancer, glaucoma & HIV/AIDS combined. October 2012 Oregon Health Authority
- In Arizona, 47% of "medical marijuana" users are 40 years of age or younger. Among users with a single debilitating condition, 71% cite pain & 9% others.

 2012 Arizona Department of Health Services

 Nearly 40% of Colorado's "medical marijuana" users are 12-34 years of age, & the age of the average user is 41. 94% of all users cite severe pain. 2012 Colorado Department of Public Health & Environment

- 11.6% of Arizona high school marijuana smokers got it from a "medical marijuana" user. 2012 Arizona Criminal Justice Commission
- 74% of Denver teens in substance abuse treatment used someone else's "medical marijuana."

2012 Salomonsen-Sautel, et al., Journal of the American Academy of Child Adolescent Psychiatry

• 34% of 12th graders who used marijuana in the past year & live in a "medical marijuana" state say one of their sources is another person's "medical marijuana."

2013 Monitoring the Future Survey/University of Michigan

- 85% of all "medical marijuana" users in Colorado were registered by 50 physicians (< 3% of licensed docs). 15 doctors registered 49% of users, & one doc handled 10% of users. 2011 Nussbaum, Boyer & Kondrad-MDs/Colorado Department of Public Health & Environment
- In Oregon, 9 physicians accounted for half of all "medical marijuana" users. One doctor saw 40-80 users/day, & a retired heart surgeon helped 4,180 "medical marijuana" users in a year. 2012 The Oregonian

- The relaxation of marijuana laws has caused a spike in the number of young Colorado children treated for accidentally eating marijuana-laced cookies, candies, brownies & beverages. The allure of marijuana edibles, which taste & look like simple sweets, makes them risky.

 May 2013 Journal of the American Medical Association Pediatrics
- The average number of marijuana-related exposures for young children 0-5 was 4/year from 2006-2008, but rose 200% to 12/year from 2009-1012. 2011 Rocky Mountain Poison Center
- Marijuana-related incidents accounted for 28% of all Colorado ER admissions involving 12-17 year olds from 2009-2011 vs. 19.6% nationally. 2011 Drug Abuse Warning Network

• More drivers stopped by police in Washington State are testing positive for marijuana: 745 in the 1st 6 months of legalized marijuana vs. 1,000 over the last 2 years.

November 2013 Christian Science Monitor

• The total number of Colorado traffic fatalities from 2006-2011 *decreased* 16%. During the same period, Colorado traffic fatalities involving drivers testing positive for marijuana only *increased* 114%. 2011 Colorado Department of Transportation

• Denver area marijuana-related emergency room visits more than tripled in 7 years to 3,871. 2011 Drug Abuse Warning Network

"Medical Marijuana:" Case Studies

- Residents of states with "medical marijuana" laws had marijuana abuse/dependence rates almost twice that of other states. In another study, marijuana usage rates among youths age 12-17 were higher in "medical marijuana" states (8.6%) vs. other states (6.9%). 2012 Cerda. M., Drug & Alcohol Dependence. 2011 Wall, M., Annals of Epidemiology
- New Mexico teen marijuana use increased from 7.79% just before the start of that state's "medical marijuana" program to 9.34% 5 years later. 2009-2010 National Survey on Drug Use & Health
- 80% of "medical marijuana" states reported increased usage among youth 12-17 vs. 5 years earlier. 2009-2010 National Survey on Drug Use & Health

"Medical Marijuana:" Case Studies

- 10.72% of 12-17 year old Colorado youth are current marijuana users vs. 7.64% nationally.

 2011 National Survey on Drug Use & Health
- School resource officers, counselors, nurses, staff & officials with Colorado school safety & disciplinary programs are anecdotally reporting an increase in marijuana-related incidents in middle & high schools.

 November 2013 Denver Post
- Colorado drug-related school suspensions & expulsions increased 41% from 2008/09-2011/12. 2012 Colorado Department of Education

"Medical Marijuana:" Case Studies

- The number of interdiction seizures of Colorado marijuana destined for other states in 2012 totaled 274, up 407% from 54 in 2005. 2012 El Paso Intelligence Center, National Seizure System
- In 2008, Colorado had about 4,800 registered "medical marijuana" patients & no known dispensaries. In 2012, "medical marijuana" card holders in Colorado had grown to more than 108,000, & licensed dispensaries totaled 532. 2013 Rocky Mountain High Intensity Drug Trafficking Area
- Denver has 204 "medical marijuana" dispensaries, roughly 3 times the number of Starbucks & McDonald's combined. 2012 CBS' 60 Minutes

"Medical Marijuana:" Alternatives

- Research shows a few orally-administered individual *components* of the cannabis plant's principal psychoactive ingredient tetrahydrocannabinol (THC) do have therapeutic potential to relieve pain, control nausea, stimulate appetite & decrease ocular pressure. Smoking or ingesting crude marijuana is not required.
- Dronabinol (Marinol) & Nabilone (Cesamet) are FDAapproved & legally available as prescription pills.
- Pain relief from pills (e.g., Dronabinol) may last longer, & may not leave people feeling as high as they do after they smoke the drug. April 2013 Neuropsychopharmacology Journal

"Medical Marijuana:" Alternatives

- The FDA is considering approval of a mouth spray (Sativex) containing 2 synthetic cannabinoids.
- An oral liquid formulation (Epidiolex) containing nonpsychoactive Cannabidiol (CBD) has been designated an orphan drug by the FDA for study in an Investigational New Drug program for treating adolescent seizure disorders.
- University of Mississippi researchers have developed a patch to deliver THC.

"Medical Marijuana:" Alternatives

- Many other FDA-approved medicines, currently available in dose-specific forms that do not involve marijuana, are prescribed & dispensed regularly by health care professionals as safe & effective treatments.
- Research continues on cannabinoids, & other substances, to determine if they may be formulated similar to other medicines for medical use (e.g., morphine from opium, aspirin from tree bark, penicillin from moldy bread, etc.).

Marijuana & Public Safety

- Few people are in state or federal prison for marijuana crimes, particularly possession offenses. A recent national survey of state prison inmates shows 6% were drug possession offenders & 4.4% were drug offenders with no prior sentences. 2008 White House Office of National Drug Control Policy
- Of all 3,571 Iowa prison admissions in 2012, 5% were primarily for drug possession, 2.3% for marijuana possession, & 0.17% (6) for 1st-time marijuana possession as the most serious offense. Many marijuana offenders admitted to Iowa prison had prior convictions &/or probation revocations. 2012 Iowa Division of Criminal & Juvenile Justice Planning

Marijuana & Public Safety

- In a random sampling of 100 drug offenders admitted to Iowa prisons whose primary drug was marijuana:
 - ➤ 63% were for trafficking offenses, 20% for possession offenses & 17% for other offenses.
 - > 93% had at least one prior criminal conviction (at least 80% had prior felony convictions).

2012 Iowa Division of Criminal & Juvenile Justice Planning

 47.31% of Iowa substance abuse treatment referrals are via the criminal justice system.

2012 Iowa Consortium for Substance Abuse Research & Evaluation

Marijuana & Public Safety

Maximum marijuana possession penalties under Iowa law:

- 1st offense = serious misdemeanor, up to a \$1,000 fine & 6 months in jail.
- 2nd offense = serious misdemeanor, up to a \$1,875 fine & 1 year in prison.
- 3rd offense = aggravated misdemeanor, up to a \$6,250 fine & 2 years in prison.
- (Note: Marijuana possession cases frequently result in deferred judgments & a civil penalty of \$315. Courts may, & often do, suspend all or part of jail sentences.)

- Marijuana legalization would not eliminate the black market. Legalization means price comes down, the number of users goes up, the underground market adapts, & any revenue gained through new taxes most likely would not keep pace with the financial & social cost of making the drug more accessible. 2012 White House Office of National Drug Control Strategy
- Taxes on marijuana would never pay for the increased social costs that would result from more users. Our nation's experience with alcohol & tobacco shows that for every dollar gained in taxes, we spent 10 on social costs.

2009 Lancet, Global Burden of Disease and Injury & Economic Costs Attributable to Alcohol Use

- Legalization would not curb drug-related violence.
 Marijuana accounts for only a portion of proceeds gained by criminal organizations profiting from heroin, cocaine & meth distribution, human trafficking, other crimes & the marijuana trade. 2012 White House Office of National Drug Control Policy
- "Medical marijuana is being diverted inside Colorado and to other states across the country...23 states were identified receiving Colorado's "medical marijuana."
 2012 Rocky Mountain High Intensity Drug Trafficking Area

- Iowa law enforcement officers are seizing increasing amounts of marijuana originating in Colorado. In 2010, Colorado was the source state in 10% of all Iowa drug interdiction stops finding marijuana. That grew to 25% in 2011 and 36% in 2012. 2013 Iowa Department of Public Safety
- Iowa reported the 9th highest number of highway interdiction incidents in which Colorado marijuana was seized. 2012 El Paso Intelligence Center, National Seizure System
- Iowa recorded the 7th highest number of marijuana parcels intercepted from Colorado for delivery in Iowa. ^{2012 U.S. Postal Inspection Service}

- Outdoor marijuana cultivation sites are increasingly common. "Grows" often result in destruction of natural habitat from diesel spills, pesticide runoff & trash. 2010 National Drug Intelligence Center
- Recent eradication efforts in Iowa indicate fewer, but larger, marijuana grows. The 7,262 plants seized in FY 2013 is the most in 4 years. 2013 Iowa Department of Public Safety

White House Position on Marijuana

- President Obama has said federal law enforcement will not pursue recreational marijuana users in states that have determined that it's legal. Meanwhile, federal prosecutors have been cracking down on growers and sellers of "medical marijuana" for alleged law violations.
- "I...do not believe that legalizing drugs is the answer."
 2013 President Obama in Mexico City
- The Obama administration steadfastly opposes legalization of marijuana & other drugs because legalization would increase the availability & use of illicit drugs, & pose significant health and safety risks to all Americans, particularly young people. 2012 White House Office of National Drug Control Policy

ODCP Position on Marijuana

- The consensus of available scientific research does <u>not</u> support the legalization of crude marijuana for smoking or any other form of consumption, due to its many health & public safety hazards.
- Rigorous federal research of promising individual cannabis components should be pursued with vigor to develop *safe*, *tested* & *effective science-based* medicines for standardized & measured use with physician & pharmacy oversight to treat valid medical needs, similar to other medicines currently being studied or already authorized by the FDA.

Key Questions

- What are the facts, where do they come from, & who else needs to know?
- Who pays for pro-marijuana legalization efforts, & why?
- What are possible unintended consequences?
- What does science tell us, & what are the public safety considerations?
- What can we learn from states that have approved some form of marijuana legalization?

Key Questions

How would marijuana use by others impact your family's health & safety?

- Accountants
- Attorneys
- Auto Mechanics
- Construction Workers
- Day Care Providers
- Educators
- Engineers
- Health Care Providers

- Manufacturers
- Motorists
- Paramedics
- Pharmacists
- Police Officers & Firefighters
- Policy Makers
- Transit Workers
- Etc.

Is it good for Iowa children?

Stay Safe!

Iowa Governor's Office of Drug Control Policy www.iowa.gov/odcp